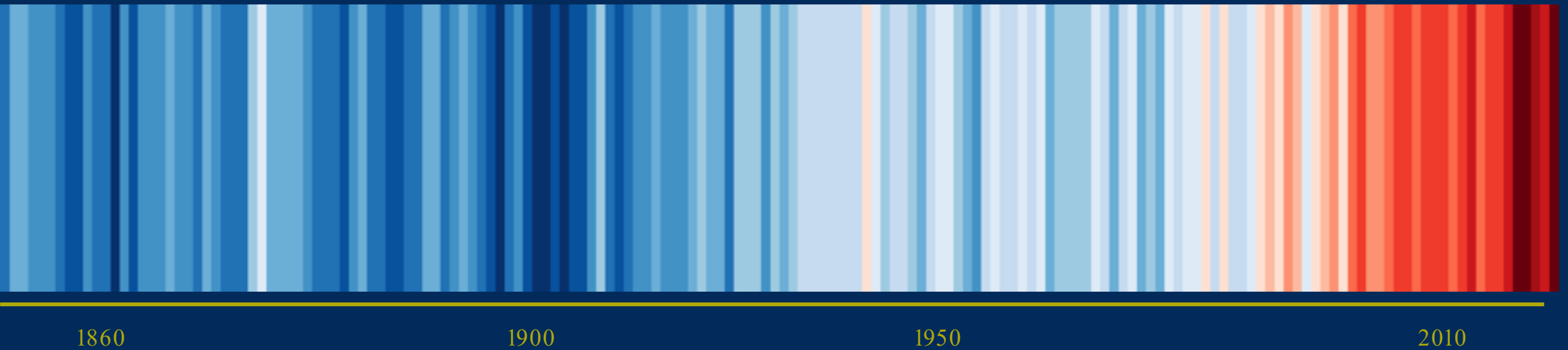


# CLIMATE CHANGE

## Setting the Scene



01.

CLIMATE CHANGE BUSINESS IMPACT

02.

CLIMATE CONCEPTS

PART 1

---

# CLIMATE CHANGE BUSINESS IMPACT

## Delhi suffers at 49C as heatwave sweeps India

© 16 May 2022

< Climate change



## Pakistan floods 'made up to 50% worse by global heating'

Study says climate crisis likely to have significantly increased rainfall and made future floods more likely



## Mekong coffee growers struggle with drought and heating climate

Drought aggravated by climate change is hurting coffee growers in the Mekong region, and intensive farming techniques are part of the problem



## 'Not enough water': Cambodia's farmers face changing climate

Communities around Southeast Asia's biggest lake are feeling the effects of droughts and rising demand for land.



## QUESTION 1

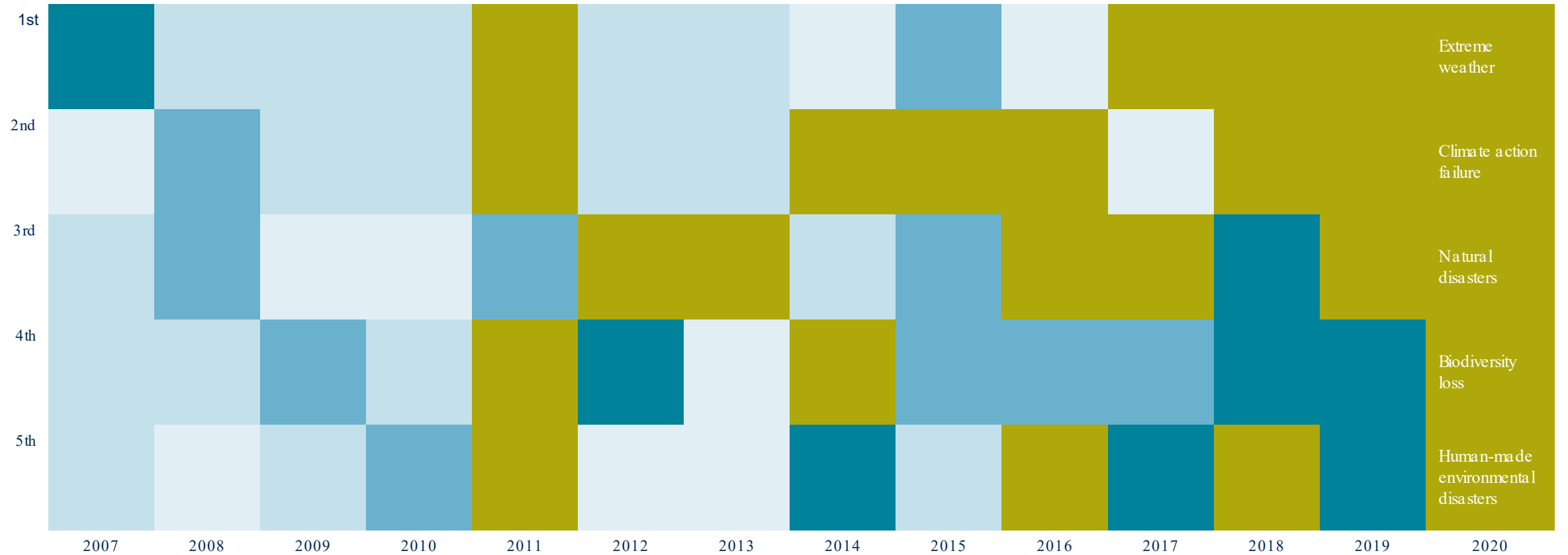
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Do you foresee any business impacts from climate for your fund, and if so over what time horizon?

- a. No, I do not think climate will impact my business.
- b. Yes, it impacts business already
- c. Yes, it will impact business in the next 1 to 5 years.
- d. Yes, it will impact but only more than 10 years from now.



## Top 5 Global Risks in Terms of Likelihood





**Singapore** limited domestic availability of water resources. Rising global temperatures have changed rainfall patterns, which affect the amount of water collected and stored in reservoirs.



**India** flooding in 2021 cost \$3.2 billion, affects 50,000 people



**Cambodia** Temperature rise and associated heat stress are likely to cause Cambodia's GDP to reduce by at least 10% by 2050.



**Uganda: more droughts in already dry areas.**

**Drought conditions in 2010/2011 damage value of \$1.2 billion (7.5% of 2010 GDP)**



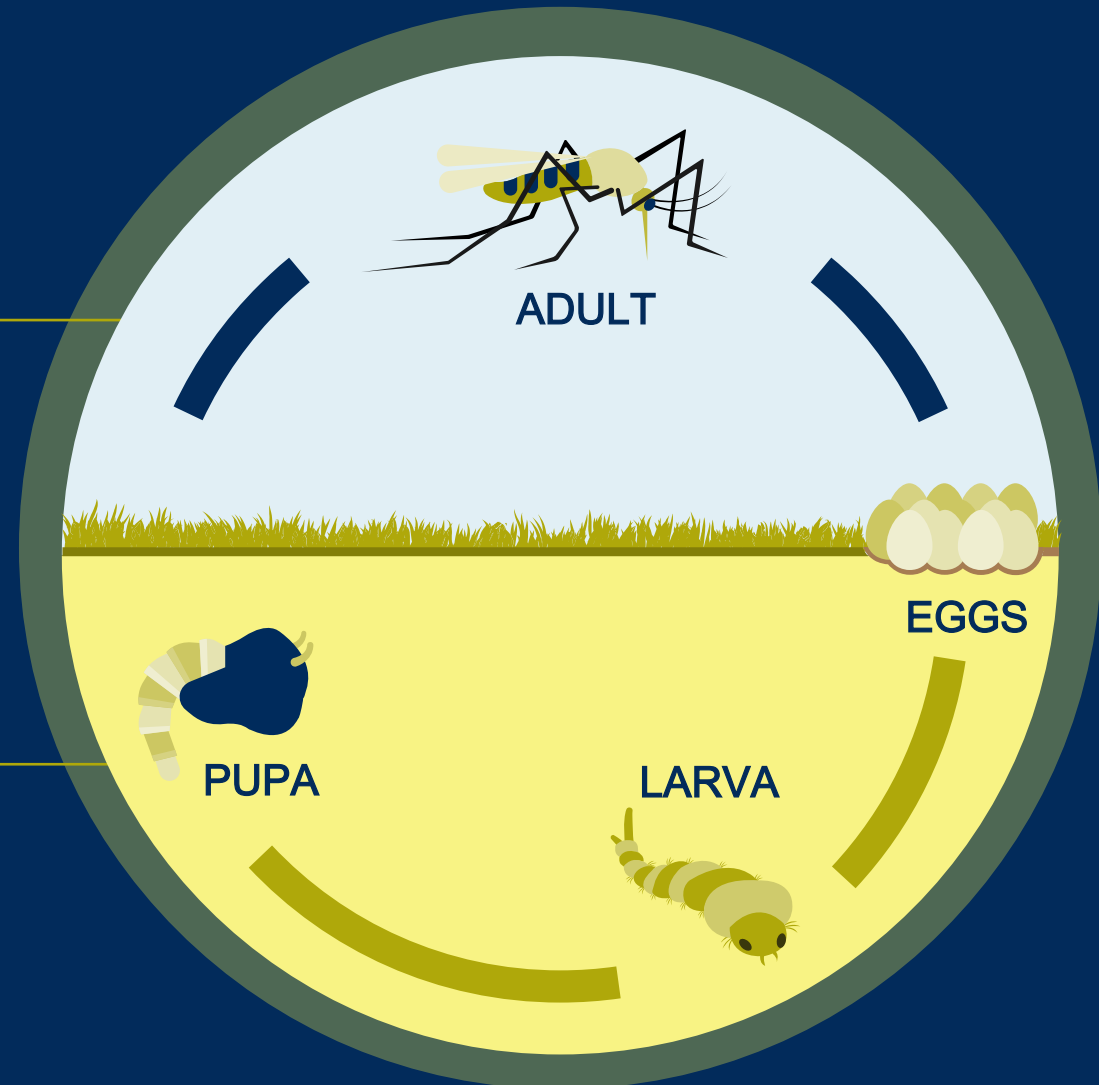
**Singapore: limited domestic availability of water resource** Rising global temperatures have changed rainfall patterns, which affect the amount of water collected and stored in reservoirs.



**Rwanda: eastern and central areas are expected to experience increased aridity and drought**



A warmer climate increases the spread of malaria and dengue: mosquitos can live in places they could not before. In SouthEast Asia dengue and Zika are rising public health challenges



**60%** of coffee varieties worldwide are in danger of extinction



Coffee is highly sensitive to weather variations.

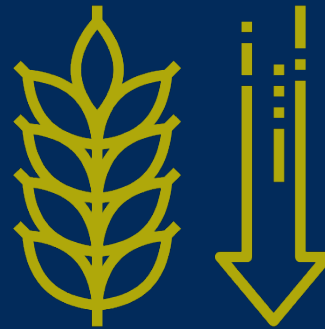


## DEMAND



**50%**  
INCREASE IN  
DEMAND BY  
2050

## YIELDS



**30%**  
DECREASE IN  
CROP YIELD BY  
2050 WITH NO  
ADAPTATION

## LIVELIHOODS



**500 MLN**  
SMALL FARMS  
MOST  
AFFECTED



Pressure will come from multiple fronts:



Regulators



Government



Investors



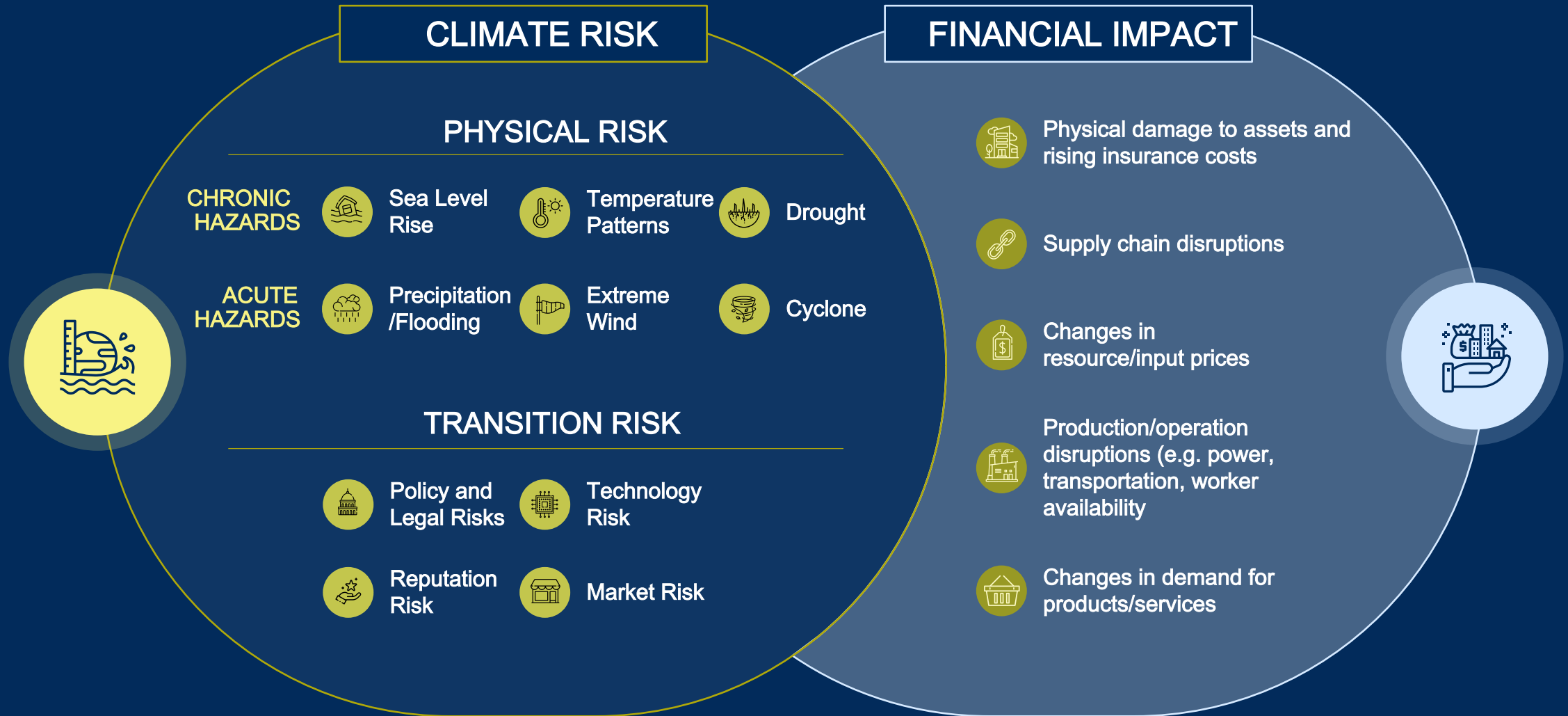
Investees



Consumers



Activists



## QUESTION 2

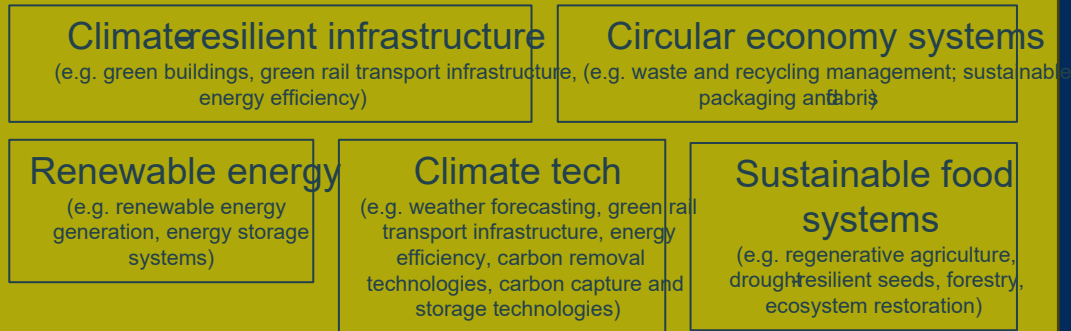
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Where will the biggest pressure come from on your fund to act on climate change?

- a. Regulation & supervision
- b. Government policies
- c. Investors
- d. Investees
- e. Activists
- f. other

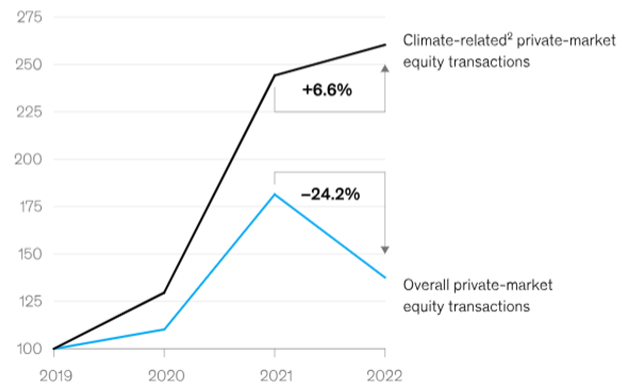


## Investment opportunities



Climate-related private-market equity investments have grown significantly despite a slowdown in the broader market.

Private-market equity deal volume,<sup>1</sup> index (100 = 2019)

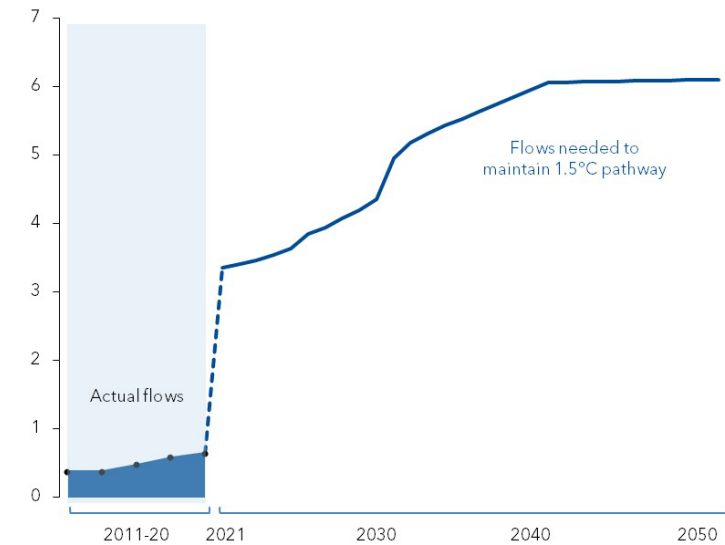


## Fundraising opportunities

Government, MDBs, DFI, and the private sector commit increasing amounts to climate objectives to bridge the financing gap

### Falling short

At \$630 billion a year, climate finance is a fraction of what's needed for developing countries.  
(global climate financing, US\$ trillion)



Source: Global Landscape of Climate Finance 2021, Climate Policy Initiative.



PART 2

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# CLIMATE CONCEPTS

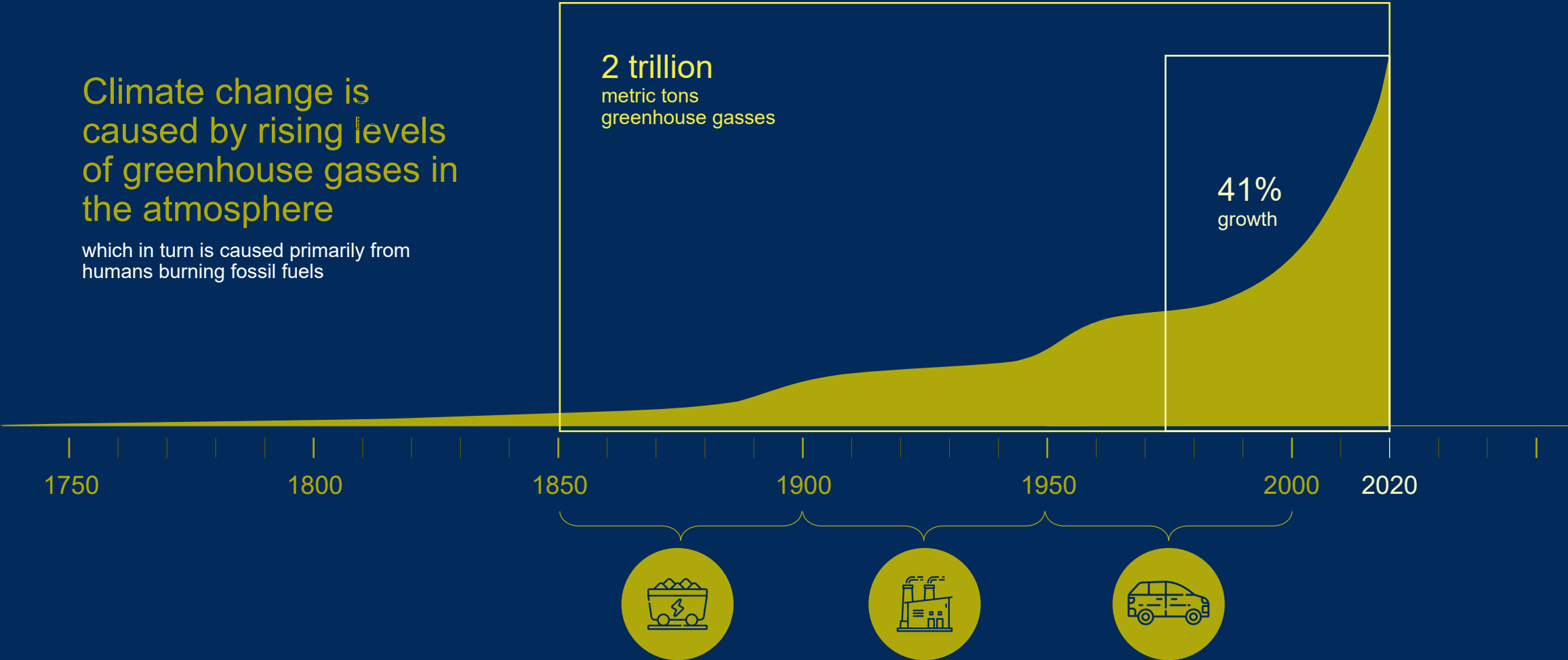


Climate change is caused by rising levels of greenhouse gases in the atmosphere

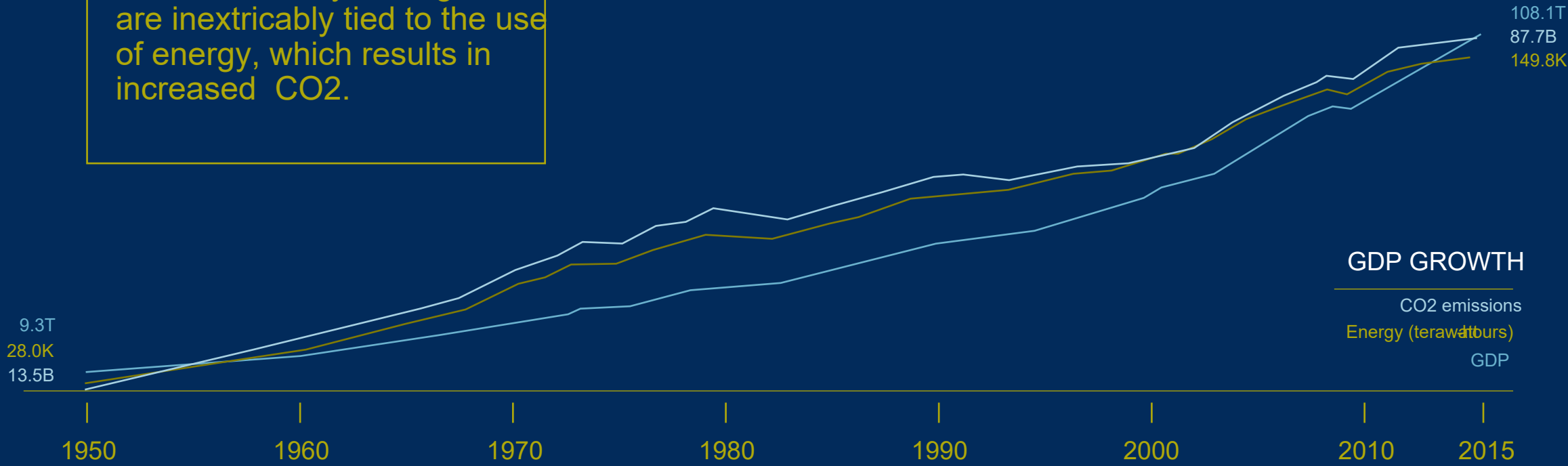
which in turn is caused primarily from humans burning fossil fuels

2 trillion  
metric tons  
greenhouse gasses

41%  
growth



Advances in human prosperity, as measured by GDP growth, are inextricably tied to the use of energy, which results in increased CO2.

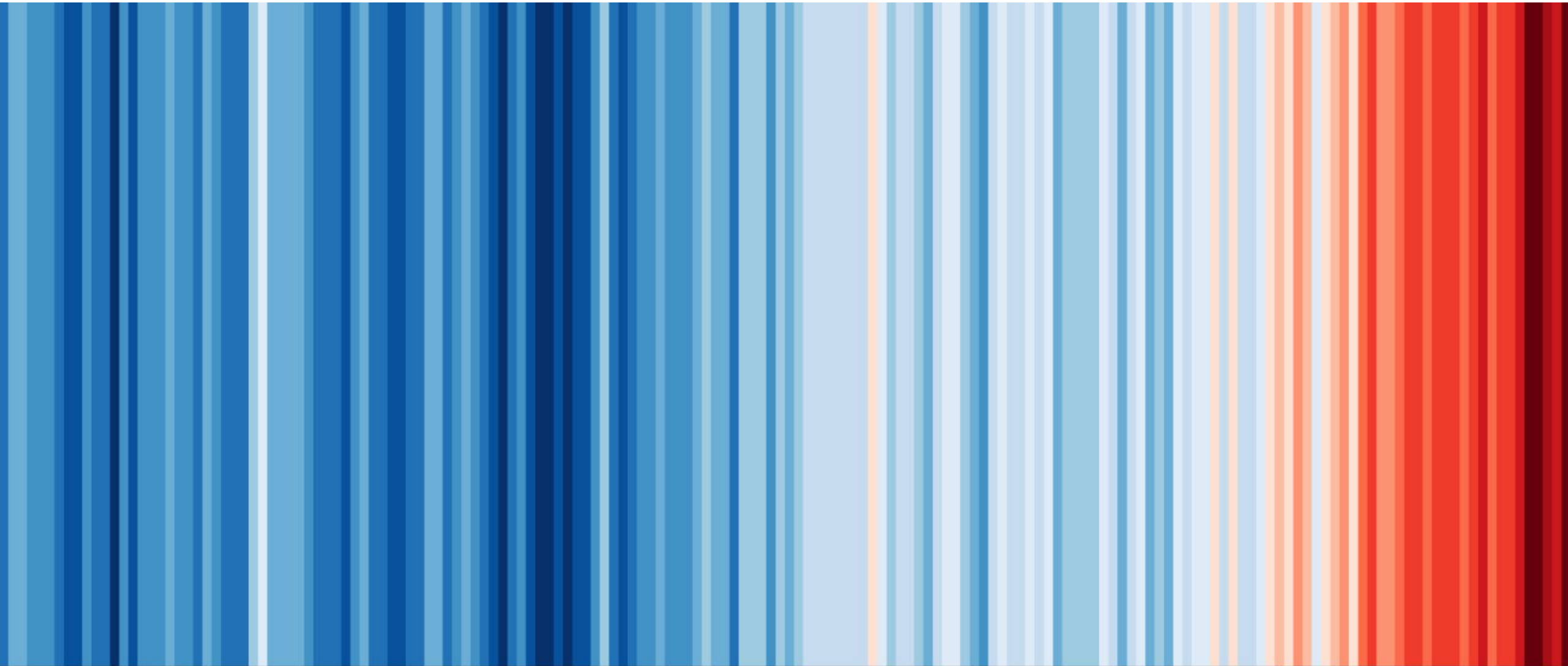


## 97 DOCTORS

tell you to give a specific treatment to your sick child. Is it wise to go with the **THREE DOCTORS** who tell you something different?



# GLOBAL TEMPERATURE CHANGE: 1850-2019



1860

1890

1920

1950

1980

2010

A WARMING ATMOSPHERE LEADS  
TO MORE EXTREME WEATHER



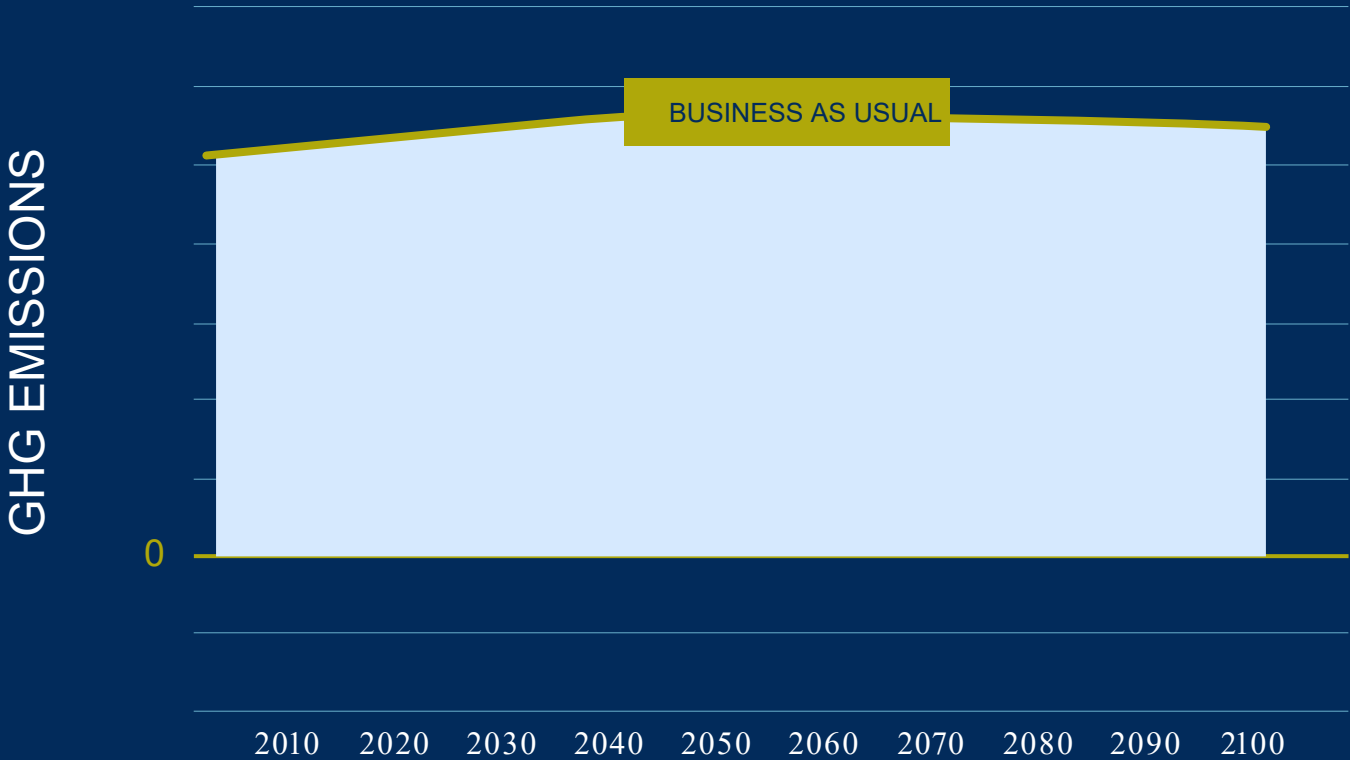
SO SOME  
AREAS CAN  
SEE INTENSE  
FLOODING



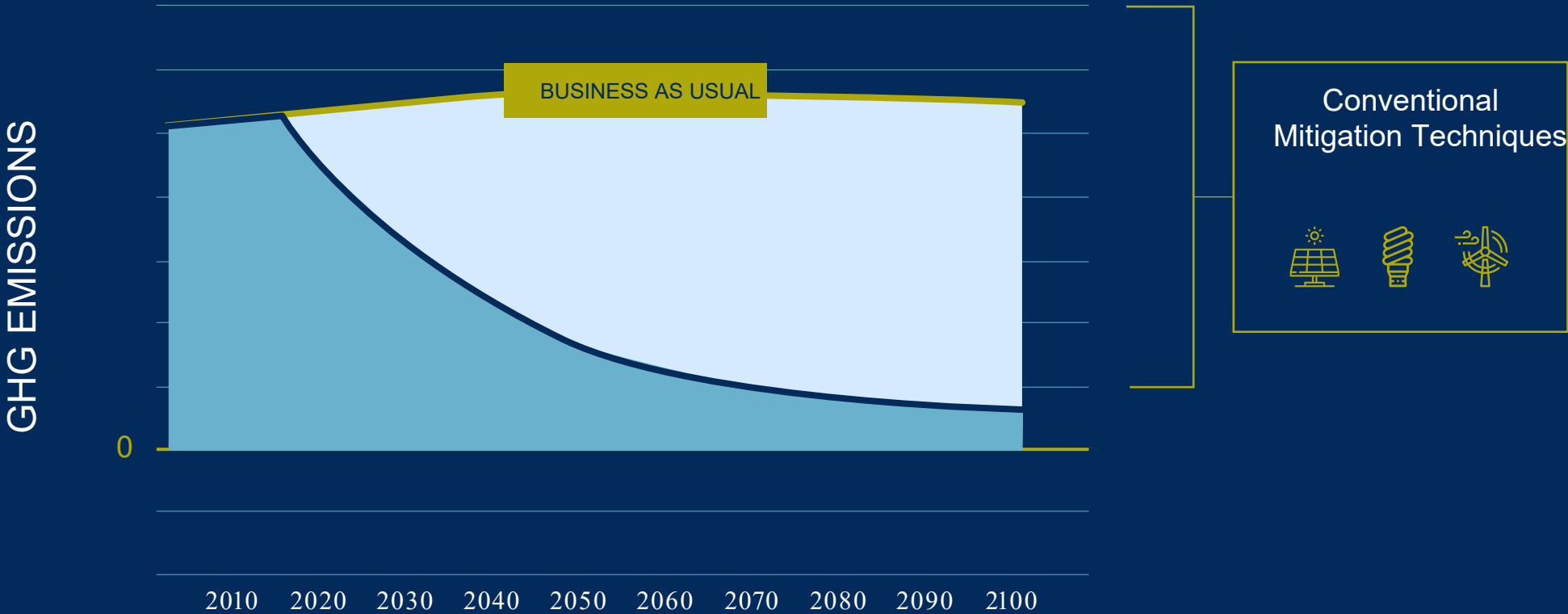
... WHILE  
OTHER AREAS  
SEE INTENSE  
DROUGHT.



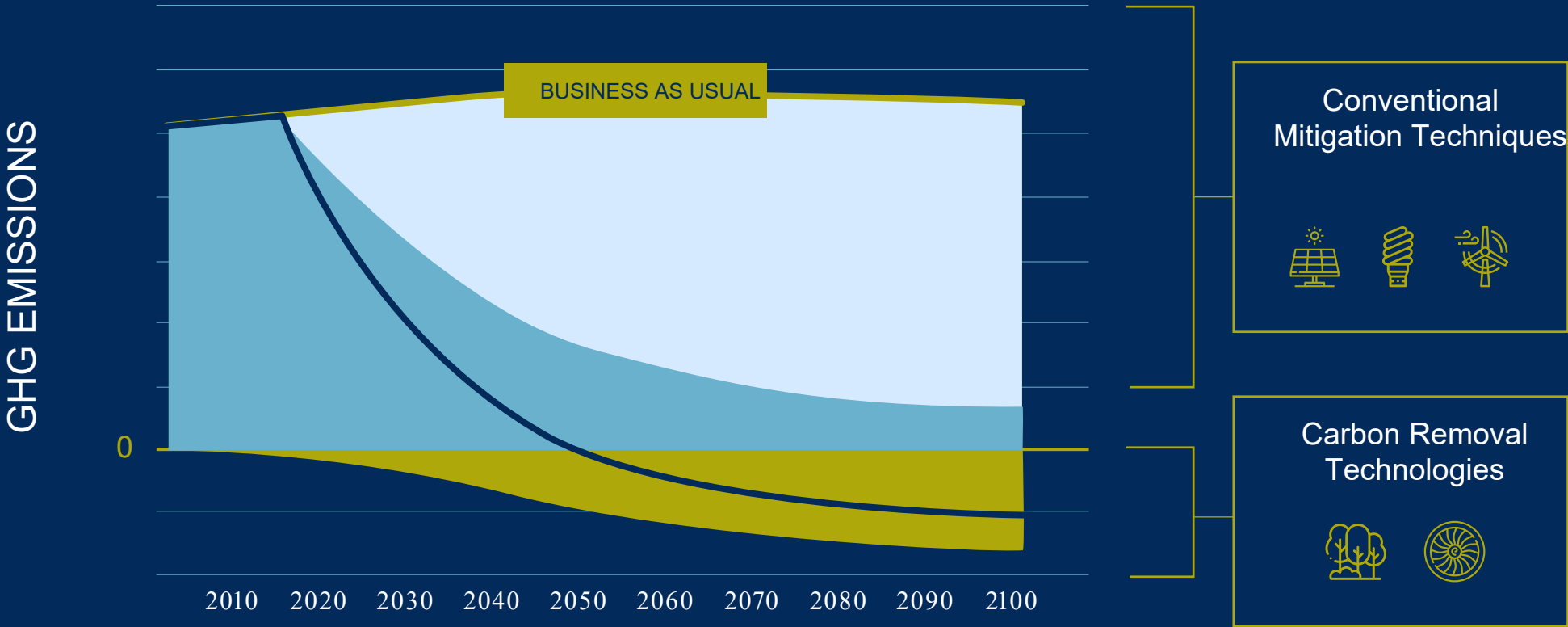
## TRANSITION TO A LOW CARBON ECONOMY



## TRANSITION TO A LOW CARBON ECONOMY

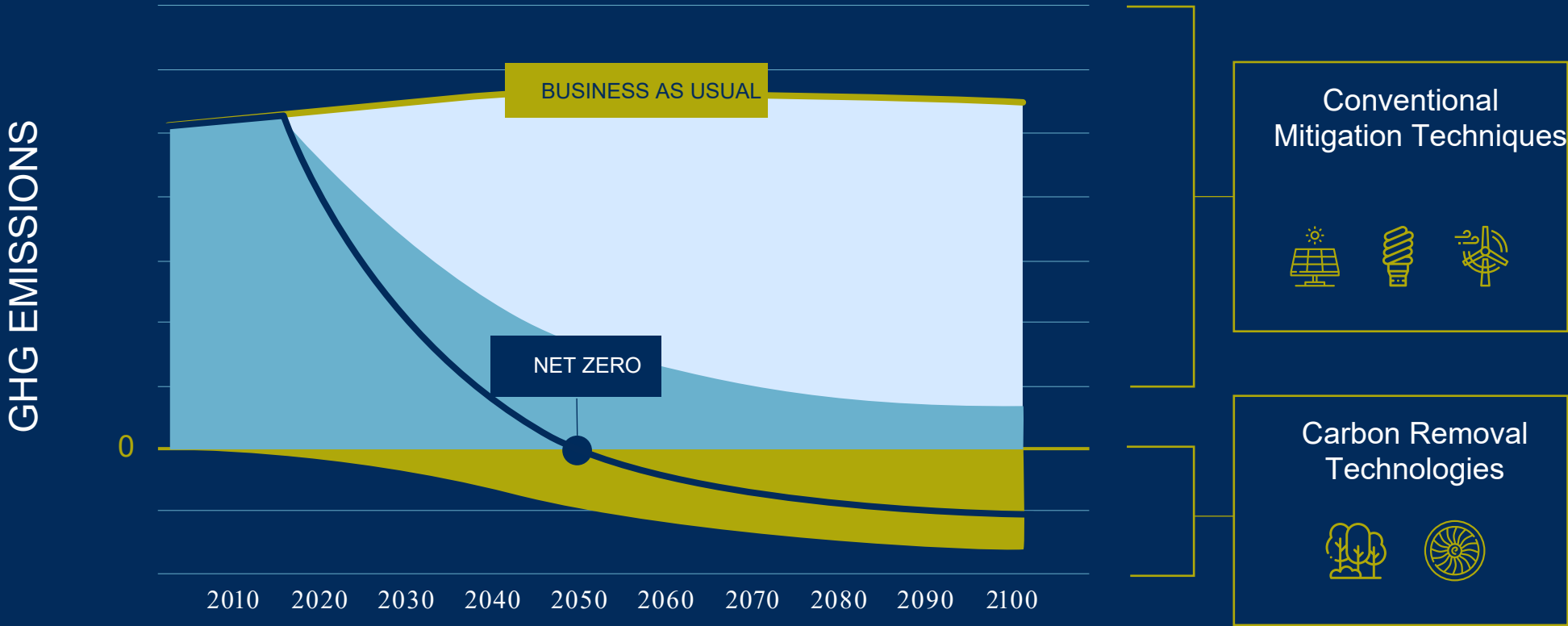


## REMOVE CARBON TO BALANCE OUT REMAINING EMISSIONS

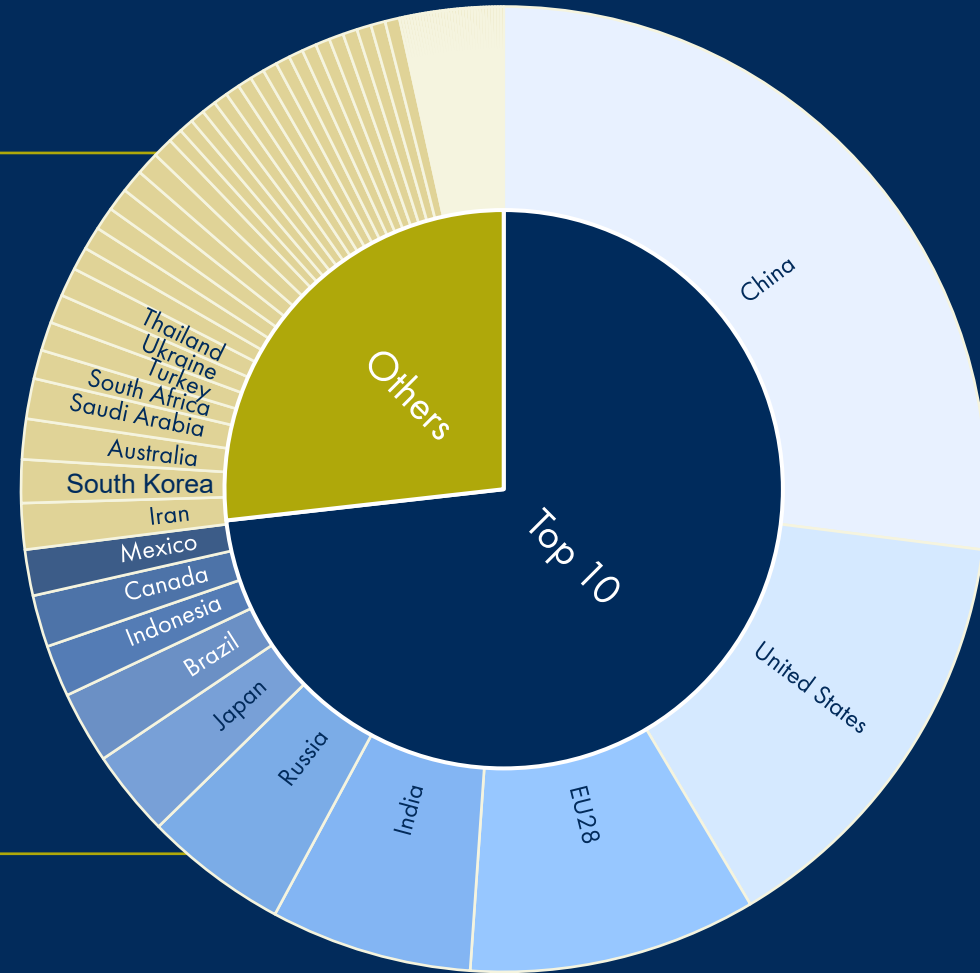




## REACH NET ZERO EMISSIONS



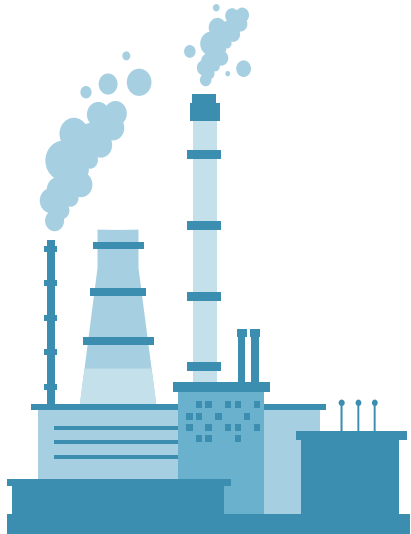
A small number of countries contribute the vast majority of greenhouse gas emissions, with the **top 10 emitters** accounting for over **two-thirds** of annual global greenhouse gas emissions.



A worker in an orange shirt and white hard hat is adjusting a large, reflective solar mirror in a desert field. The mirror is tilted and reflects the sky and clouds. Other solar mirrors are visible in the background, and a worker is also seen in the distance. The scene is set in a dry, hilly landscape under a blue sky with scattered clouds.

# MITIGATION

REDUCE EMISSIONS THAT  
CAUSE CLIMATE CHANGE

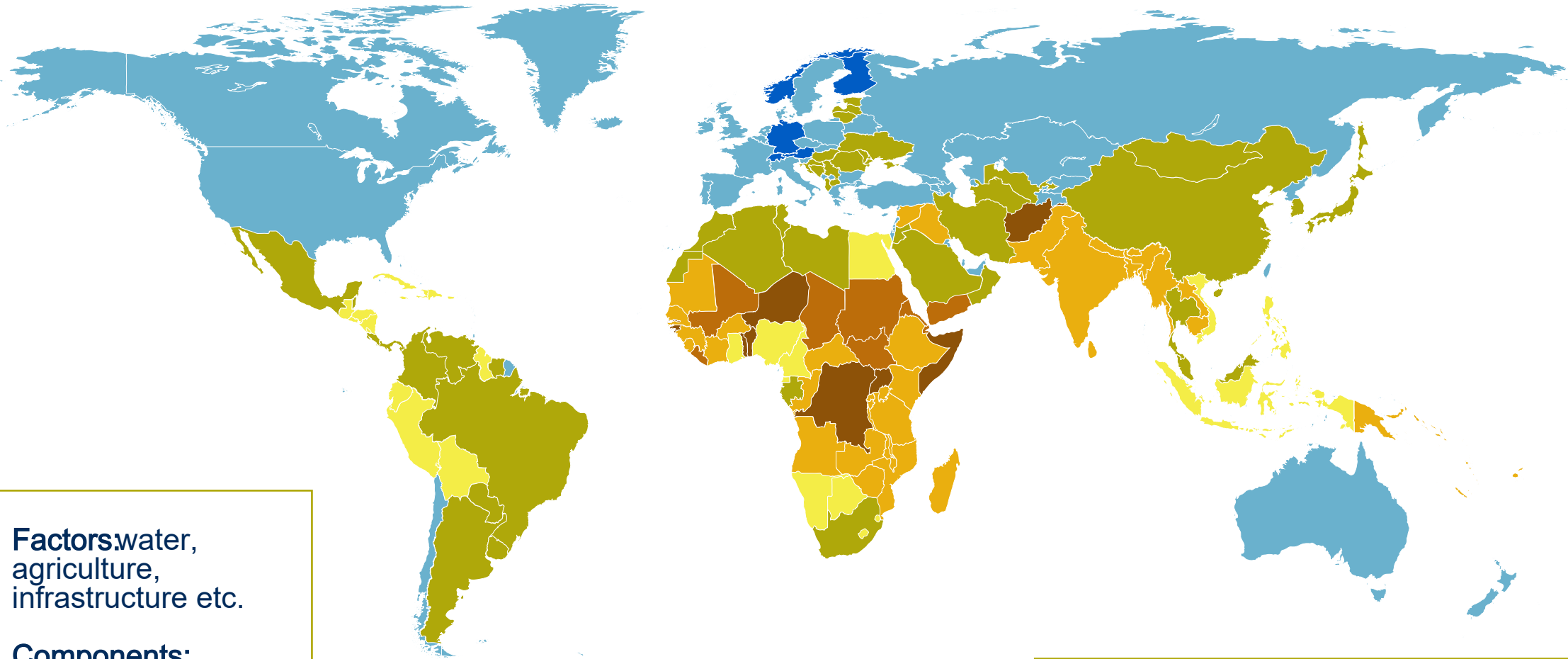


Contribution to climate change

≠



vulnerability to the impacts of climate change



**Factors:** water, agriculture, infrastructure etc.

**Components:** exposure, sensitivity, adaptive capacity



# ADAPTATION

ACTION TO REDUCE THE  
RISKS OF CLIMATE IMPACT

### QUESTION 3

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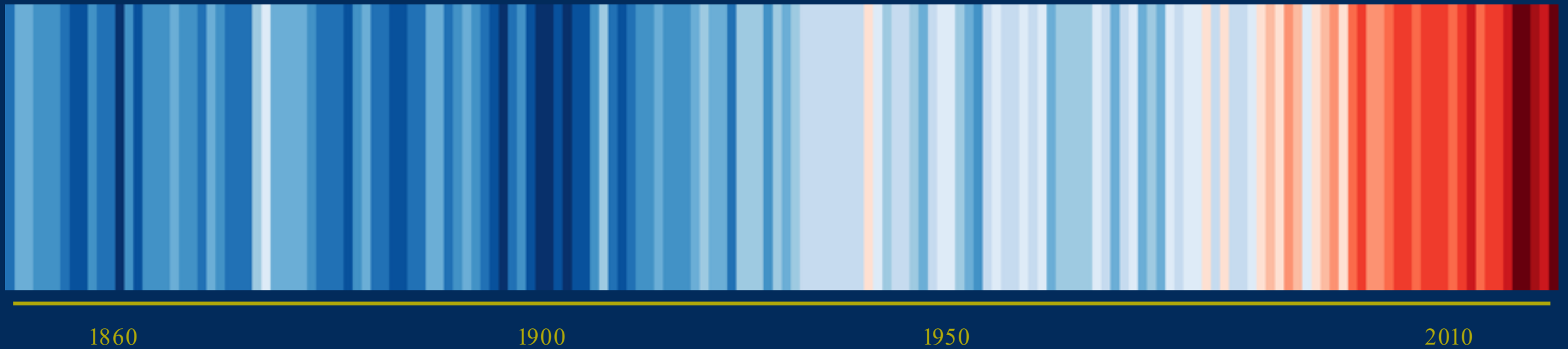
To what extent does your fund have a solid awareness and understanding of how climate change may affect business in the next 10 years?

- a. Not at all, there is a lot to do
- b. Some, we started, but can do more
- c. Good enough for now



# CLIMATE CHANGE

TCFD as a model for assessing climate risks and opportunities





01

WHERE TO GO

Vision of Fund  
Manger



02

SELECT A ROUTE:

Strategy and Risk  
Management



03

NAVIGATE:

Set Priorities



04

SET MILESTONES:

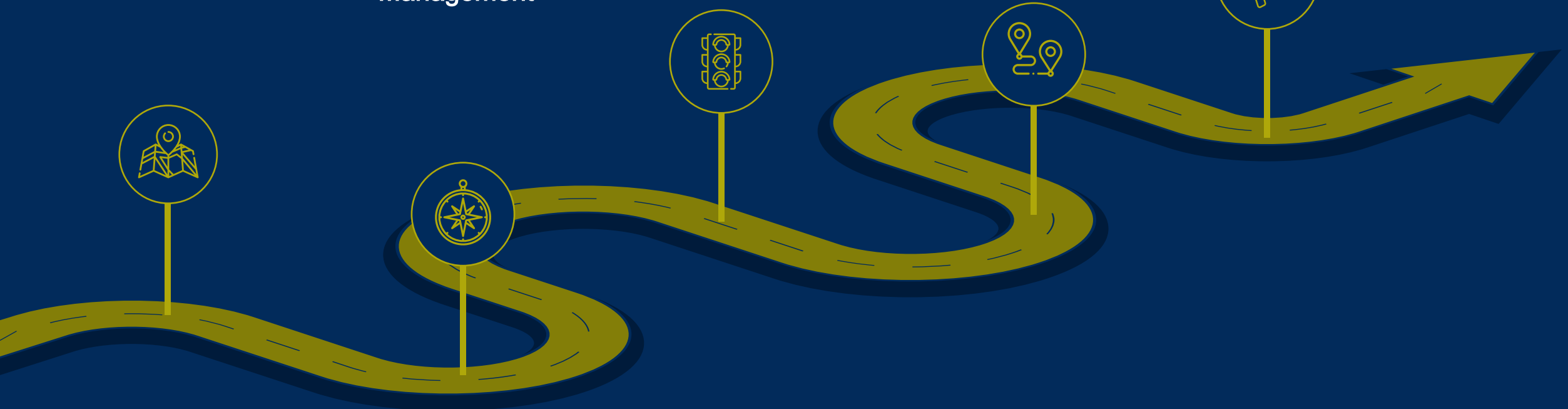
Metrics and Targets



05

COMMUNICATE:

TCFD





# CLIMATE RISK MANAGEMENT: WHY IS IT DIFFICULT? THE TIME HORIZON CHALLENGE

GLETSCHERSTAND  
GLACIERPOSITION  
1995



# PHYSICAL RISK

## DIRECT & INDIRECT TRANSMISSION

**DANGER**  
BOTTOM LANDINGS SLIPPERY AND  
SEA ROUGH ENTRY TO BOTTOM  
LANDING IS STRICTLY PROHIBITED  
**BE WARNED**

**DANGER**  
BE WARNED  
DEEP WATER, DANGEROUS TIDES, SEA BRUSH  
AND STRONG CURRENTS  
**LEAVE IMMEDIATELY**  
Visitors will not be compensated for the loss of their lives or  
property damaged and by the company  
**NOTICE TO PARENTS**  
Parents are legally responsible for their children at all  
times and consequences of trespassing on this  
Property.

A woman with short grey hair and glasses, wearing a blue denim vest over a light blue shirt, stands in a kitchen. She is holding a lit match over a running faucet. The water is splashing, and there are large flames rising from the faucet area, suggesting a gas leak or fire hazard. The background shows wooden cabinets and a doorway.

# TRANSITION RISK

## DIRECT & INDIRECT TRANSMISSION

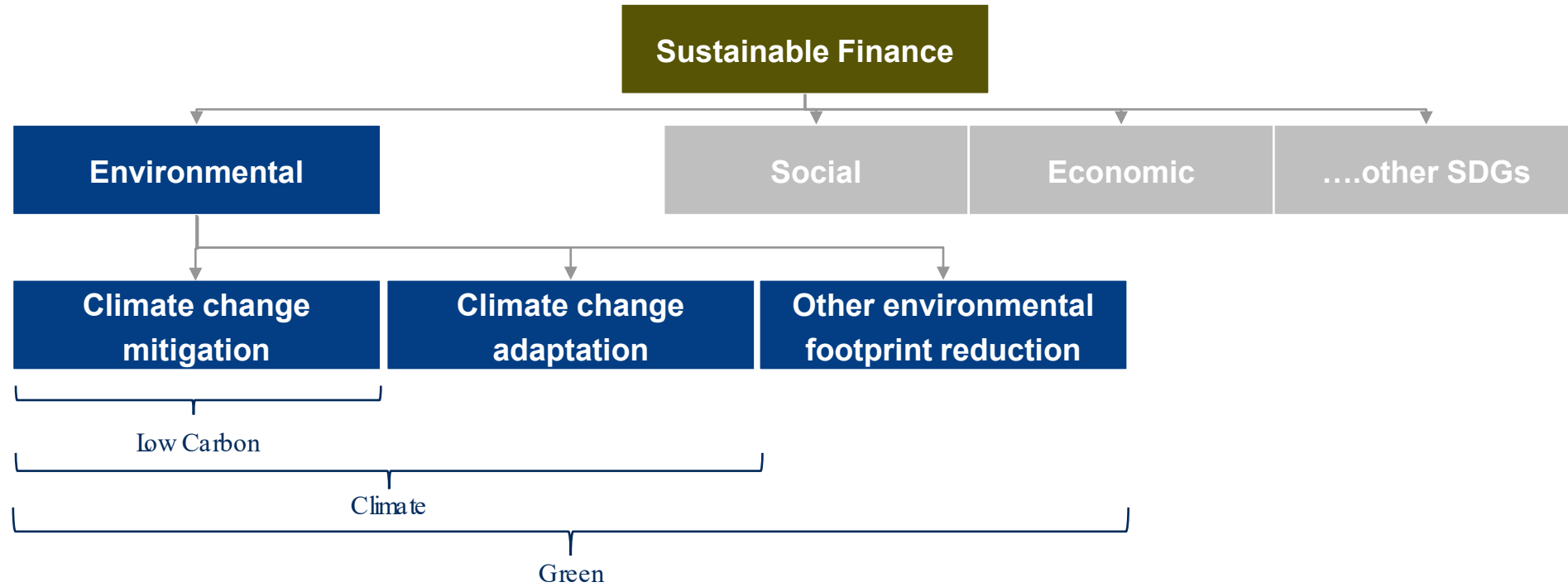


- Explain your governance around climate change
- Explain actual & potential impact of risks & opportunities on business, strategy & financial planning
- Explain how you identify, assess & manage climate risk (scenario analysis)
- Which metrics & targets do you use to manage risks and opportunities?



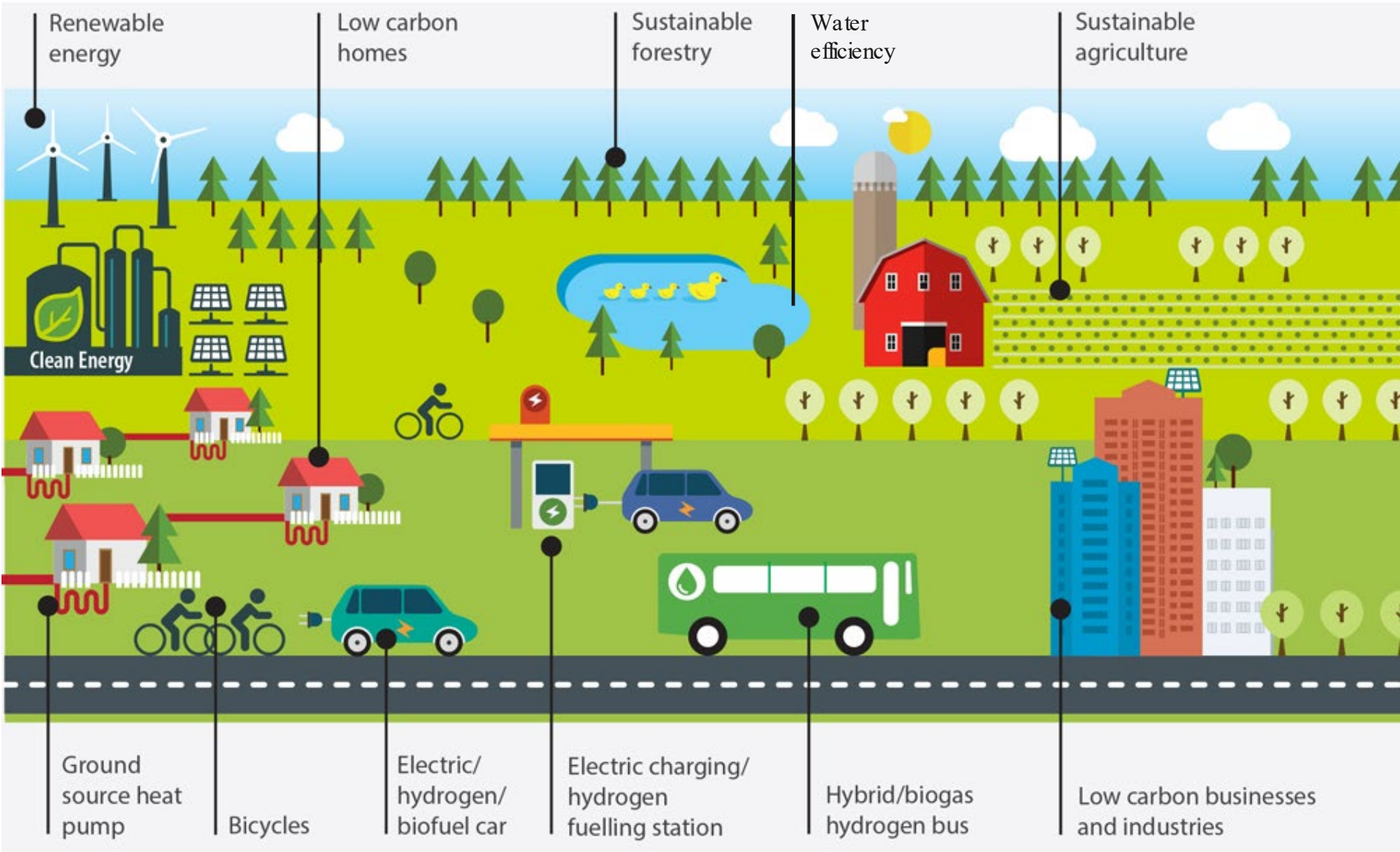
**KEY QUESTION**

How do I combine these two objectives and make a profit?





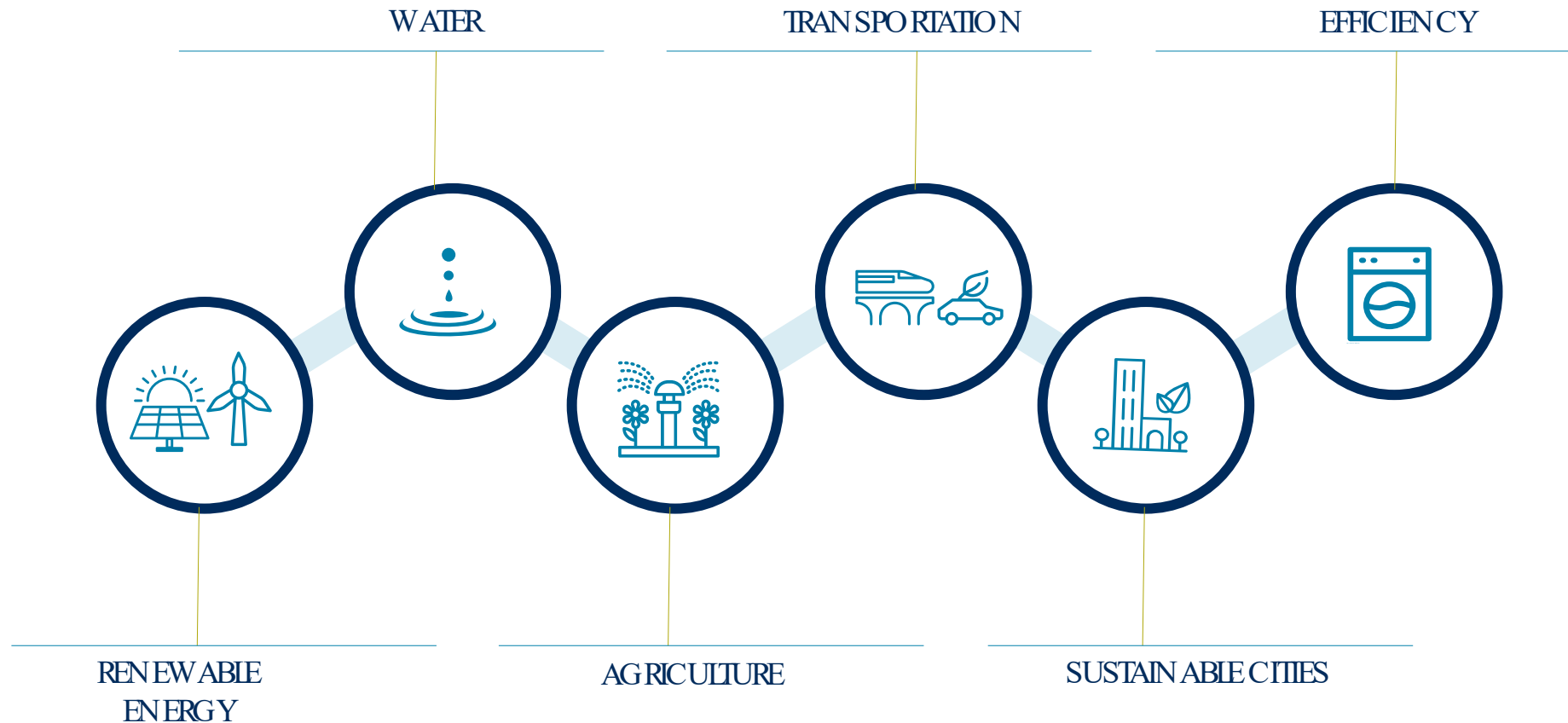
# GREEN FINANCE OPPORTUNITIES EXIST IN ALL SECTORS



FMO's FGreen definition is aimed at encompassing those investments that:

- i) reduce greenhouse gas emissions;
- ii) increase resource efficiency;
- iii) preserve and grow natural capital; and/ or
- iv) support climate adaptation.

FMO's FGreen definition is therefore beyond energy-related investments ...



THANK YOU

Peatland forest in Parupuk village, Kalimantan: [cifor.org](http://cifor.org)



Charissa Bosma  
[c.bosma@fmo.nl](mailto:c.bosma@fmo.nl)

ANNEX

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# ADDITIONAL SLIDES